THE BUNKER HILL MINING AND METALLURGICAL COMPLEX OPERABLE UNIT 3

Record of Decision

September 2002

PART 1
DECLARATION

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1.0 SITE NAME AND LOCATION

The Bunker Hill Mining and Metallurgical Complex Superfund Facility, located in the Coeur d'Alene Basin (the Basin), was listed on the National Priorities List (NPL) in 1983. The NPL facility has been assigned CERCLIS identification number IDD048340921. The facility includes mining-contaminated areas in the Coeur d'Alene River corridor, adjacent floodplains, downstream water bodies, tributaries, and fill areas, as well as the 21-square-mile Bunker Hill "Box" located in the area surrounding the historic smelting operations.

The United States Environmental Protection Agency (EPA) has identified three operable units (OUs): the populated areas of the Bunker Hill Box (OU 1); the non-populated areas of the Box (OU 2); and mining-related contamination in the broader Coeur d'Alene Basin (OU 3). This Record of Decision (ROD) is focused largely on the floodplain and river corridor of OU 3, which is also referred to as the Coeur d'Alene Basin in this ROD.

2.0 STATEMENT OF BASIS AND PURPOSE

This decision document selects a remedy for OU 3, which was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and, to the extent practicable, the National Oil and Hazardous Substances Contingency Plan (NCP). The decision is based on the Administrative Record file for this operable unit.

In accordance with the NCP, including 40 CFR 300.430(b)(7), EPA has consulted with states, tribes, and natural resource trustees during development of the Selected Remedy and sought concurrence of states and tribes for remedial actions selected within their respective jurisdictions. Letters reflecting concurrence or support from these governments are attached to this Declaration.

3.0 ASSESSMENT OF THE SITE

The remedial action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment. Such a release or threat of release may present an imminent and substantial endangerment to public health, welfare, or the environment.

4.0 DESCRIPTION OF SELECTED REMEDY

Overall Site Cleanup Strategy

The Selected Remedy includes remedial actions for (1) protection of human health in the communities and residential areas, including identified recreational areas, of the Basin upstream of Coeur d'Alene Lake (the Upper Basin and Lower Basin), (2) protection of the environment in the Upper Basin and Lower Basin, and (3) protection of human health and the environment in areas of the Spokane River.

The Selected Remedy includes a complete remedy for protection of human health in the communities and residential areas, including identified recreational areas, of the Upper Basin and Lower Basin. Certain potential exposures outside of the communities and residential areas of the Upper Basin and Lower Basin are not addressed by this ROD and will continue to present risks of human exposure to hazardous substances. These potential exposures impacting human health include:

- Recreational use at areas in the Upper Basin and Lower Basin where cleanup actions are not implemented pursuant to this ROD
- Subsistence lifestyles, such as those traditional to the Coeur d'Alene and Spokane Tribes
- Potential future use of groundwater that is presently contaminated with metals

For protection of the environment, the Selected Remedy identifies approximately 30 years of prioritized actions in areas of the Basin upstream of Coeur d'Alene Lake. During this period, EPA will evaluate the effectiveness and protectiveness of these remedial actions, as well as the technical practicability of attaining applicable or relevant and appropriate requirements (ARARs), in particular, the ambient water quality standards for lead, zinc, and cadmium and compliance with the Endangered Species Act (ESA) and Migratory Bird Treaty Act (MBTA). During the five-year review processes and at the end of this approximately 30-year period, EPA will evaluate and decide whether any additional CERCLA remedial actions are necessary to attain ARARs or to provide for the protection of human health and the environment, and whether any ARAR waivers should be applied.

EPA expressly recognizes that after the selected remedial actions are implemented, conditions in the Upper Basin and Lower Basin may differ substantially from EPA's current forecast of those future conditions, which is solely based on present knowledge. The tremendous amount of additional knowledge that will have been gained by the end of this period through long-term monitoring and five-year review processes may provide bases for future ARAR waivers. In

addition, this new information and advances in science and technology may allow for additional actions to achieve ARARs and protect human health and the environment in a more cost-effective manner.

For the Spokane River, the Selected Remedy includes a complete remedy for protection of human health upstream of Upriver Dam and a complete remedy for protection of the environment between Upriver Dam and the Washington/Idaho border. Characterization of the risks to persons, including Spokane tribal members, and others who may practice a subsistence lifestyle in the Spokane River area, was not part of the RI/FS investigations. EPA and the Spokane Tribe are cooperating in planning additional testing and studies that will be implemented to evaluate the potential exposures to subsistence users. The results of those tests and studies will determine appropriate future response actions to be taken, if any.

EPA recognizes that the State of Idaho has not concurred in the selection of any remedial action beyond those selected in this ROD. Furthermore, after implementation of the remedies selected by this ROD, EPA commits not to take or select any additional remedial actions in the Upper Basin or Lower Basin without first consulting with the State of Idaho. EPA will continue to work with the regulatory stakeholder group, which was instrumental in developing the actions selected in this ROD. Land management agencies may elect to implement cleanup actions on properties within their management jurisdiction toward achieving the overall goals of the Selected Remedy.

State legislation under the Basin Environmental Improvement Act (Title 39, Chapter 81) established the process for the formation of the Basin Environmental Improvement Project Commission. This commission includes federal, state, tribal, and local governmental involvement. EPA anticipates working as a member of this commission for implementation of the ROD and development of priorities and sequencing of cleanup activities.

During development of the Selected Remedy in this ROD, EPA worked with the natural resources trustees as required by the NCP (40 CFR 300.430(b)(7)) and will continue to work with the trustees during implementation of the Selected Remedy.

The Bunker Hill Box is a part of the Basin and a major source of metals in surface water. A ROD was signed for the populated areas of Bunker Hill Box (OU1) in 1991, and a ROD was signed for the non-populated areas of the Box (OU2) in 1992. Additional remedies for the Bunker Hill Box have not been selected in the OU2 ROD because the Box is already the subject of ongoing remedial actions. EPA will integrate actions selected for the Box with those selected for OU 3.

Principal Threat Wastes

Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained and/or would present a significant risk to human health or the environment should exposure occur.[1] Principal threat materials in the Coeur d'Alene Basin may include, for example, metal concentrates spilled during mill operations or in transport to smelters. A time-critical removal action was conducted in 1999 to address all known metal surface concentrates associated with rail transport along the Wallace-Mullen Branch of the Union Pacific Railroad (UPRR). If additional concentrates or other materials that meet the definition of principal threat waste are encountered during remedy implementation, these materials would be managed in a manner that is protective of human health and the environment and consistent with the NCP.[2] The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP§300.430(a)(1)(iii)(A)). Where EPA determines that it is not practicable to use treatment to address principal threat waste, such waste may be transported off-site, consistent with the Off-Site Disposal Rule (40 CFR 300.440) or managed safely on-site, consistent with all ARARs identified in Section 13.2 of this ROD.

Major Components of the Selected Remedy

Figures 1, 2, and 3 show the remedial actions selected for the Upper Basin, Lower Basin, and Spokane River, respectively. For protection of human health in the community and residential areas of the Upper Basin and Lower Basin, the major components of the Selected Remedy include:

- Information and intervention programs for residential and recreational users
- Partial excavation and replacement of residential soils with lead concentrations above 1,000 milligrams per kilogram (mg/kg), a barrier such as a vegetative barrier to control or limit migration of soils with lead concentrations between 700 and 1000 mg/kg, and a combination of removals, barriers, and access restrictions at commercial and undeveloped properties and recreation areas.

[1] Additional information for defining principal threat wastes can be found in USEPA (1991b) *A Guide to Principal Threat and Low Level Threat Wastes*.

[2] Concentrations used to identify principal threat waste within the "Bunker Hill Box" were: 127,000 ppm antimony; 15,000 ppm arsenic; 71,000 ppm cadmium; 84,600 ppm lead; 33,000 ppm mercury (Source: Bunker Hill Non-Populated Areas ROD, ROD ID: EPA/ROD/R10-92/041, Date: 09/22/1992). Additional factors (e.g., mobility, repository waste acceptance criteria, etc.) should be evaluated on a site-specific basis prior to disposal of material associated with implementing the Selected Remedy.

- Vacuum loan program/dust mats and interior source removals and controls to reduce individual house dust lead concentrations and loadings, as necessary. (This would be coordinated with paint abatement programs.)

- Multiple alternative drinking water sources (wellhead or point-of-use treatment, connection to the public drinking water system, or a new well) for residences using groundwater having metals at concentrations exceeding maximum contaminant levels (MCLs).

- Property owners in the Basin will be able to request soil sampling necessary for lead disclosures required for property transactions, and the results will be made available to them in a timely manner.

For protection of the environment in the Upper Basin and Lower Basin, the major components of the remedy include:

- **Upper Basin.** The Selected Remedy includes excavation and disposal, containment, bioengineering, and surface water treatment actions to reduce dissolved metals in rivers and streams. The remedy will promote development of innovative technologies, potentially including surface water treatment in Canyon Creek and Ninemile Creek. Waste dumps and stream banks that are major sources of particulate metals will be stabilized to reduce erosion.

- **Lower Basin Floodplains.** A combination of capping and excavation will be conducted in high-priority floodplain areas (areas with high use by waterfowl, high levels of lead in sediments, availability of site access, and relatively low potential for recontamination during flood events). Soil treatment to reduce lead bioavailability may be applied in selected areas if effective treatment technologies are identified.

- **Lower Basin Beds and Banks.** Excavation of contaminated bank sediment and bank stabilization will be used for river banks that are highly susceptible to erosion. A pilot river bed sediment removal program will be conducted in the Coeur d'Alene River near Dudley. Splay areas where sediments naturally collect during floods will be engineered to act as traps for collection of contaminated sediments.

The Selected Remedy does not include remedial actions for Coeur d'Alene Lake. State, tribal, federal, and local governments are currently in the process of implementing a lake management plan outside of the Superfund process using separate regulatory authorities.

For shoreline sediment depositional areas along that reach of the Spokane River within the State of Washington upstream of the Spokane Indian Reservation, the Selected Remedy consists of a combination of access controls, capping, and removals. The remedy for the contaminated sediments behind Upriver Dam will be established following further study and engineering evaluation. Dredging or capping are the options anticipated for sediments behind the dam.

5.0 STATUTORY DETERMINATIONS

Consistent with 40 CFR 300.430(a)(i)(B) and 40 CFR 300.430(f)(1)(ii)(C)(1), the remedial action selected by this ROD is an interim measure and will neither be inconsistent with nor preclude implementation of the final remedy that will be identified in subsequent decision documents.

The measures selected in this remedy will provide an adequate level of protectiveness of human health and the environment; comply with federal, state, and tribal requirements that are applicable or relevant and appropriate within the scope of the Selected Remedy; result in a cost-effective action; utilize permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable; and satisfy the statutory preference for treatment as a principal element of the remedy (i.e., reduce the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants as a principal element through treatment).

The remedial actions selected in this ROD are not intended to fully address contamination within the Basin. Thus, achieving certain water quality standards, such as state and federal water quality standards and criteria and maximum contaminant levels for drinking water, are outside of the scope of the remedial action selected in this ROD and are not applicable or relevant and appropriate at this time.[3] Similarly, special status species protection requirements under the MBTA and ESA are only applicable or relevant and appropriate as they apply to the remedial actions included within the scope of the Selected Remedy. The Selected Remedy is designed to provide prioritized actions towards meeting the statutory requirement of protectiveness of human health and the environment. Accordingly, the Selected Remedy, by its nature, need not be as protective as the final remedy is required to be under the statute. Here, the Selected Remedy is sufficiently protective in the context of its scope, even though it does not, by itself, meet the statutory protectiveness standard that a final remedy would have to meet.

[3] The water quality ARARs apply to point source discharges to surface water created as a result of implementation of the Selected Remedy. Similarly, maximum contaminant levels are applicable or relevant and appropriate at residences where an alternate drinking water supply is provided or drinking water is treated.

In addition, because this remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, statutory reviews will be conducted at least every five years after initiation of remedial action to ensure that the Selected Remedy is, or will be, protective of human health and the environment.

6.0 DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary (Part 2) of this ROD. Additional information can be found in the Administrative Record file for this operable unit.

- Chemicals of concern and their respective concentrations (See Section 7.1.1 Identification of COCs, Tables 7.1-1 through 7.1-5, Tables 7.1-21 and 7.1-22, and Tables 7.2-2 through 7.2-5).

- Baseline risk represented by the chemicals of concern (See Sections 7.1.1 Risk Characterization and 7.1.1 Total Subsistence Scenarios and Tables 7.1-12 through 7.1-19).

- Cleanup levels established for chemicals of concern and the basis for these levels (See Section 8, Section 12.1.1, Section 12.1.3, Section 12.2.3, and Section 12.4.3). For protection of ecological receptors, numerical cleanup criteria have not yet been established for all chemicals of concern in all media. It is anticipated, however, that they will be established during implementation of this ROD and documented in an Explanation of Significant Differences (ESD).

- A discussion of source materials constituting principal threats (See Section 11.0).

- Current and reasonably anticipated future land use assumptions and current and potential future beneficial uses of groundwater used in the baseline risk assessment and ROD (See Section 6, Section 7.1.1 Exposure Assessment, and Section 7.1.1 Subsistence Scenarios).

- Potential land and groundwater use that will be available at the site as a result of the Selected Remedy (See Section 12.1.3, Section 12.2.3, and Section 12.4.3).

- Estimated capital, annual operation and maintenance (O&M), and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected (See Section 12.1.3, Section 12.2.3, and Section 12.4.3).

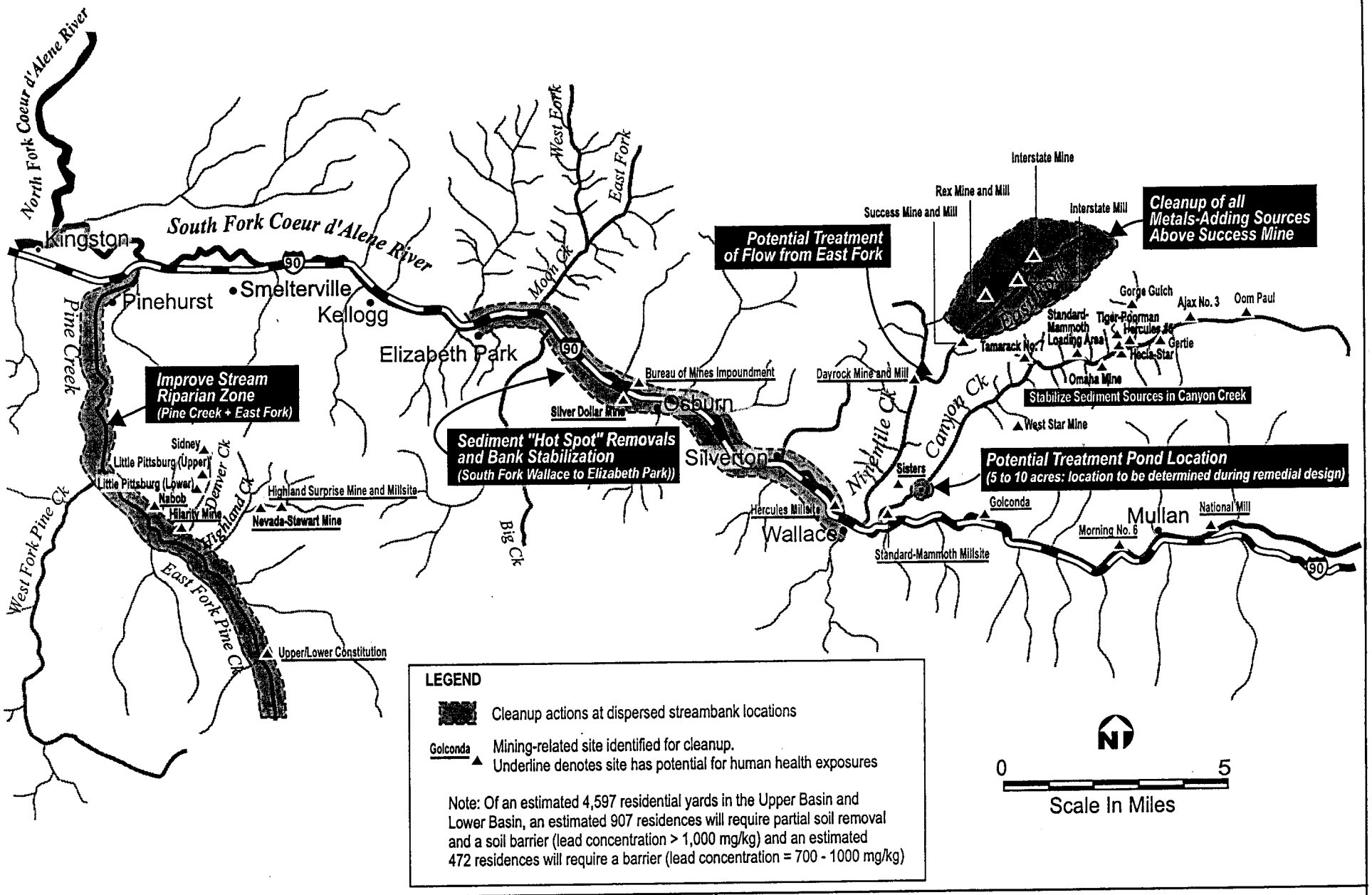
- Key factor(s) that led to selecting the remedy (i.e., how the Selected Remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decision (See Section 10).

Authorizing Signature

12 Sept. 2002

L. John Iani
Regional Administrator
EPA Region 10

Date



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Coeur d'Alene Basin RI/FS
RECORD OF DECISION

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EPA No. 2.9

Figure 1
Upper Coeur d'Alene Basin Cleanup Actions

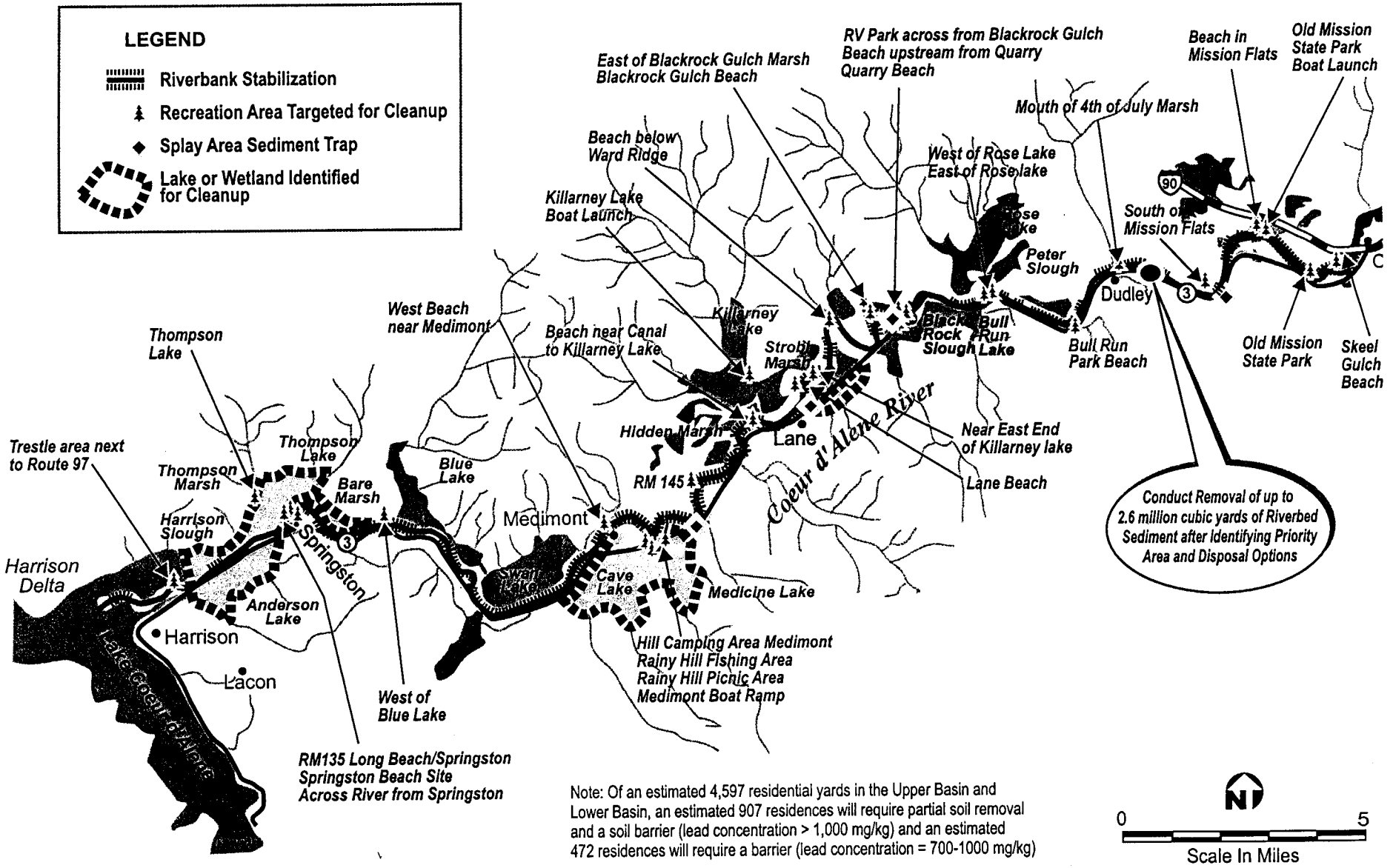

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Figure 2
Lower Coeur d'Alene Basin Cleanup Actions

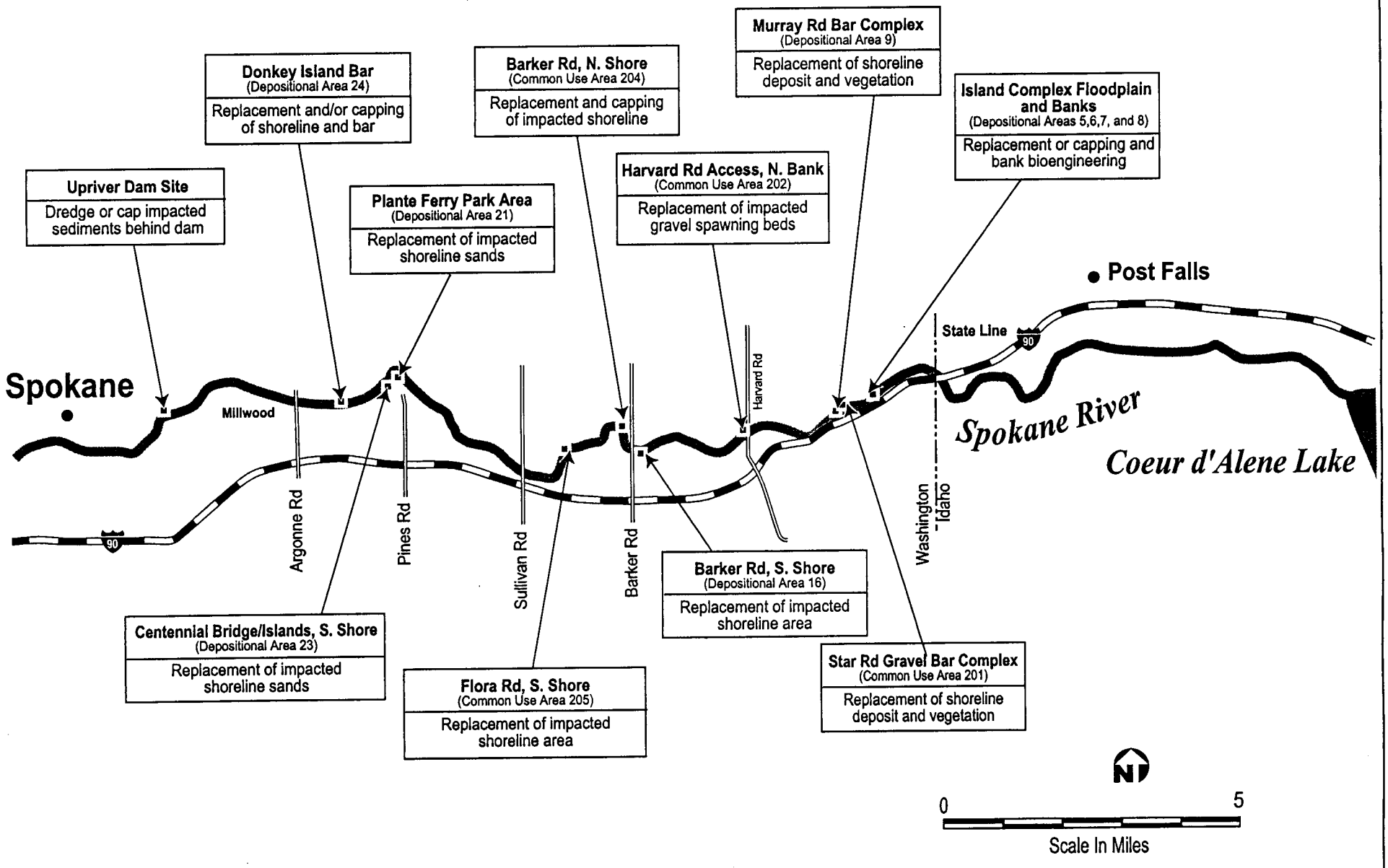

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Figure 3
Spokane River Cleanup Actions